CLAIMS

What is claimed is:

1   1.   A method for transferring data between a control object of a user interface and an

2   application component of an application program without direct communication between

3   the user interface and the application program, the method comprising:

4   accessing, by an application-independent process, from a description file associated

5   with the application program one of (i) a layout description of the control object that is

6   displayed on the user interface and (ii) a connection description associating the control

7   object with the application component of the application program; and

8   transferring data representative of a change to one of the application component

9   and the control object.

1   2.   The method of claim 1 further comprising translating content of the description file,

2   by the application-independent processes, to generate the control object and to associate

3   changes represented by the transferred data with one of the control object and the

4   application component.

1   3.   The method of claim 1 further comprising establishing a communication channel

2   between the application-independent client process and the application-independent

3   server process.

1   4.   The method of claim 3 wherein the communication channel is asynchronous.

1   5.   The method of claim 1 wherein the description file is in XML format.

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1   6.   The method of claim 1 further comprising generating an instance of the control

2   object.

1   7.   The method of claim 1 wherein the application component comprises a member

2   representative of an attribute of the application component alterable by a user or

3   displayable to the user, further comprising generating an instance of management code,

4   the management code instance mapping the correspondence between the control object

5   and the application component member.

1   8.   The method of claim 1 further comprising generating a container object for each

2   application component and control object.

1   9.   The method of claim 1 wherein the application component comprises a member

2   representative of an attribute of the application component alterable by a user or

3   displayable to the user, further comprising:

4   monitoring the application component member and the control object; and

5   transferring data in response to a change of state of one of the application component

6   member and the control object.

1   10.   The method of claim 1 wherein the application component comprises a member

2   representative of an attribute of the application component alterable by a user or

3   displayable to the user, further comprising:

4   generating a unique identifier for one of the application component member and the

5   control object; and

6   referencing the unique identifier in a proxy layer.

1   11. A server node to enable the update of a user interface element of a user interface

2   without direct interaction between an application program and the user interface, the

3   server node comprising:

4   a description file associated with the application program, the description file

5   including one of (i) a layout description of the user interface element and (ii) a connection

6   description associating a control object of the user interface with an application

7   component of the application program; and

8   an application-independent process in communication with the application program, the

9   application-independent process accessing the description file, detecting a change of state

10   to the application component and transferring data in response to a detected change of

11   state of the application component.

1   12. The server node of claim 11 wherein the application-independent process is further

2   configured to update the application component in response to received data, the received

3   data representing a change of a state of the associated control object of the user interface

4   on a client.

1   13. The server node of claim 11 wherein the description file is in XML format.

1   14 (Amended) The server node of claim 12 wherein the application component

2   comprises a member representative of an attribute of the application component alterable

3   by a user or displayable to the user; and wherein the application-independent process

4   further comprises an instance of management code, the management code instance

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5   mapping the correspondence between the application component member and a control

6   object located on a client.

1   15. (Amended) The server node of claim 11 further comprising a container object for

2   each application component.

1   16. (Amended) The server node of claim 11 wherein the application component

2   comprises a member representative of an attribute of the application component alterable

3   by a user or displayable to the user; and wherein the application-independent process

4   further comprises a container object monitoring the application component member

5   associated with that container object and initiating data transfer in response to a change of

6   state of the associated application component member.

1   17. (Amended) The server node of claim 11 wherein the application component

2   comprises a member representative of an attribute of the application component alterable

3   by a user or displayable to the user; and wherein the server node further comprises a

4   proxy layer referencing a unique identifier for the application component member.

1   18. (Amended) A client node to enable the update of a user interface element of a user

2   interface without direct interaction between an application program and the user interface,

3   the client node comprising:

4   a description file associated with the application program, the description file

5   including one of (i) a layout description of the user interface element and (ii) a connection

6   description associating a control object of the user interface with an application

7   component of the application program; and

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8   an application-independent process in communication with a server, the

9   application-independent process accessing the description file, generating a control object

10   associated with the application component based on the description file and updating the

11   user interface in response to receiving data representing a detected change of state of the

12   application component.

1   19. (Amended) The client node of claim 18 wherein the application-independent process

2   is further configured to detect a change of state of the user interface and to transfer data to

3   the application-independent server process in response to the detected change.

1   20. (Amended) The client node of claim 18 wherein the description file is in XML

2   format.

1   21. (Amended) The client node of claim 18 wherein the application-independent process

2   further comprises an instance of a control object for each of a plurality of user interface

3   elements, the control object instance representing a corresponding user interface element.

1   22. (Amended) The client node of claim 18 further comprising a container object for the

2   control object.

1   23. (Amended) The client node of claim 18 further comprising a container object

2   monitoring the control object associated with the container object and initiating data

3   transfer in response to a change of state of the associated control object.

1   24. (Amended) The client node of claim 18 further comprising a proxy layer referencing

2   a unique identifier for the control object.